

REMARKS

Pending Claims

Claims 1-11 and 13 have been amended and claim 12 has been canceled without prejudice of disclaimer. Accordingly, claims 1-11 and 13 are currently pending.

Priority

Applicants appreciate the Examiner's acknowledgment of the claim for priority and receipt of the priority document.

Information Disclosure Statement

Applicants appreciate the Examiner's acknowledgment of the Information Disclosure Statement filed on May 25, 2001.

35 U.S.C. §112

Claims 2-6 have been amended to overcome the 35 U.S.C. §112, second paragraph rejection. Further, claim 7 has been amended, in part, to overcome the objections to the claim noted in the Office Action. Applicants note that "outside the semiconductor chip" is clear since it sets forth being outside, as opposed to inside or internal of the semiconductor

chip. Further, the lower-layer device finds antecedent support in the specification and in Fig. 7, which shows devices 800A and 800B, which are audio visual devices as set forth on page 17, lines 15-19, for example. Accordingly, claim 7, as amended, complies with 35 U.S.C. §112, second paragraph.

Claims 8-11 have also been amended to comply with 35 U.S.C. §112, second paragraph.

35 U.S.C. §103

Claims 1-7, 9, 11-13 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's admitted prior art (AAPA in Figs. 13 and 14) in view of Miyazaki et al, U.S. Patent No. 6,466,668 (Miyazaki). Reconsideration of the rejection is requested for the following reasons.

According to the present invention, an authentication communicating semiconductor device has a main processing unit 500, as shown in Fig. 1, an encryption unit 30 and an interface unit 20 of the IEEE 1394 standard. The encrypted information is communicated with an external device 90. Further, the main processing unit, encryption unit and the

internal bus 41, which is used in the connection between the main processing unit and the encryption unit, are formed on one semiconductor chip. See the paragraph of bridging pages 15 and 16 of the specification.

Since the authentication unit and the encryption unit in the present invention are formed on one semiconductor chip, it is difficult to intercept the encryption process and the authentication process, via a communication port of a host CPU that controls the overall system of the electronic apparatus on which the semiconductor device is mounted, for example. Further, the claimed arrangement makes it difficult for a third person to externally tamper with the encryption key used in the encryption process and the communication control code used in the authentication process. See the paragraph bridging pages 12 and 13 of the specification, for example.

Applicants have recognized the problems with the prior art by discussing the prior art shown in Figs. 13 and 14 of the present application. Fig. 13 shows a communication device 72 with an authentication device 71 connected via an internal bus 41 to the communication device. The authentication device 71 generates the encryption key and conducts authentication in

response to a request from an audio visual (AV) device 800 that receives data. Fig. 14 shows how an illegal device 75 can be connected to the CPU bus 41 and the authentication device 71 in each of two AV devices 800A and 800B to form an illegal bypass of the authentication process. The claimed arrangement of the present invention inhibits such access to the system that would enable an unauthorized user to analyze information such as the encryption key and control data. By the present invention, the authentication communicating semiconductor device of the present invention is not easily circumvented in the manner disclosed by applicants and authentication can be legitimately approved.

Part of the invention set forth by Applicants in the present application is the identification of the problem with the prior art authentication communicating devices which are readily accessed through illegal connections that lead to unauthorized authentication. The rejection relies upon the teachings of Miyazaki to suggest to one having ordinary skill in the art that the problems identified by the Applicants with the prior art devices can be overcome in the manner claimed by Applicants. Miyazaki relates to an IC card enabling

encryption processing at high speed. However, Miyazaki does not mention the problems identified by Applicants and therefore the reference does not suggest the combination that is claimed which overcomes these problems. Accordingly, Miyazaki does not provide the motivation to one having ordinary skill in the art to combine the components set forth in the admitted prior art by Applicants in the manner claimed by Applicants in claims 1-11 and 13. Therefore, the combination of the AAPA and Miyazaki does not render claims 1-11 and 13 obvious under 35 U.S.C. §103(a), and therefore the rejections should be withdrawn.

Conclusion

In view of the foregoing amendments and remarks,
Applicants contend that the above-identified application is
now in condition for allowance. Accordingly, reconsideration
and reexamination are requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John R. Mattingly", is written over the typed name.

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